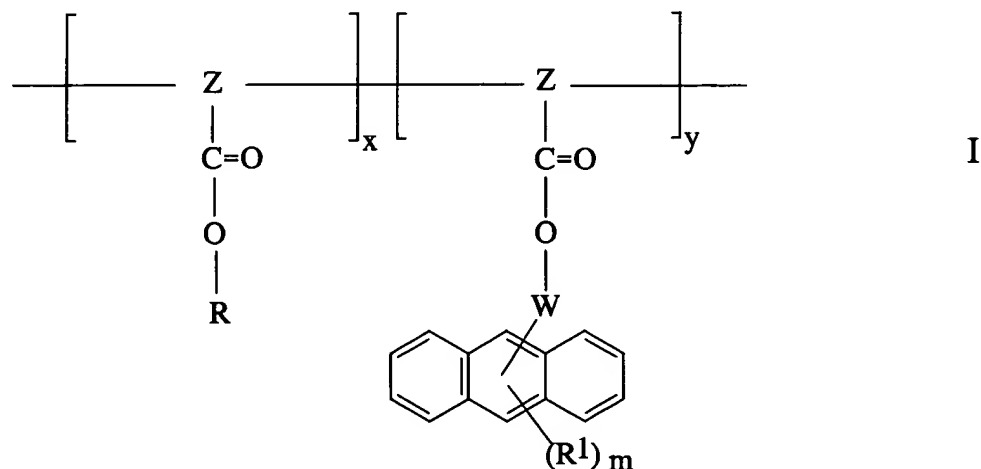


What is claimed is:

1. A photoresist composition comprising a resin binder, a photoactive component and a dye compound that contains anthracene groups.
2. The photoresist of claim 1 wherein the dye is a polymer.
3. The photoresist of claim 2 wherein the polymer has a weight average molecular weight of at least about 5000.
4. The photoresist of claim 1 wherein the dye is a copolymer.
5. The photoresist of claim 1 wherein the dye is a copolymer that contains anthracene and acrylic units.
6. The photoresist of claim 1 wherein the dye comprises a structure of the following Formula I:



wherein each R is independently substituted or unsubstituted alkyl;

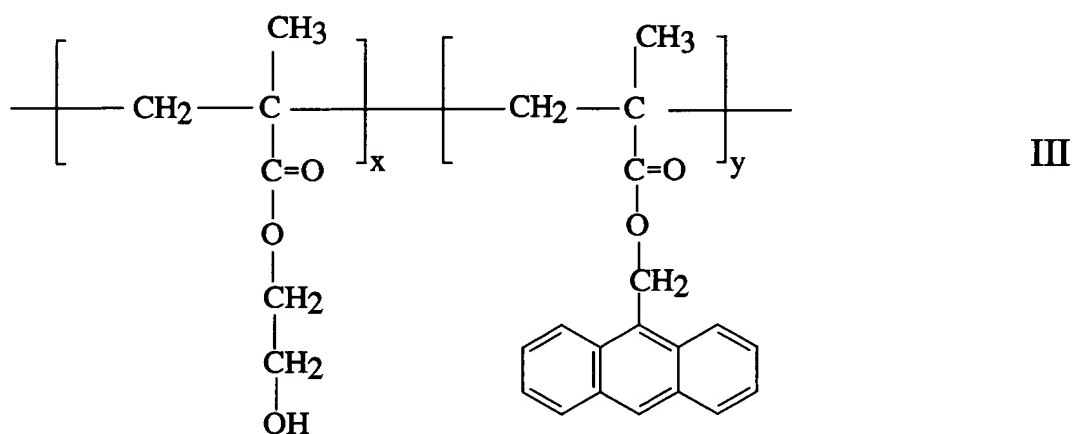
W is a bond or substituted or unsubstituted alkylene;

each R¹ may be independently halogen; substituted or unsubstituted alkyl; substituted or unsubstituted alkoxy; substituted or unsubstituted alkenyl; substituted or unsubstituted alkynyl; substituted or unsubstituted alkylthio; cyano; nitro; amino; hydroxyl;

m is an integer of from 0 (where the anthracyl ring is fully hydrogen-substituted) to 9;

x and y are the mole fractions of the respective units; and
each Z is a bridge group between polymer units.

7. The photoresist of claim 1 wherein the dye comprises a structure of the following Formula III:



8. The photoresist of claim 1 wherein the resist is a positive-acting resist.

9. The photoresist of claim 1 wherein the resist is a negative-acting resist.

10. A photoresist that comprises a resin binder, a photoactive component and a polymeric dye that contains one or more polycyclic chromophores.

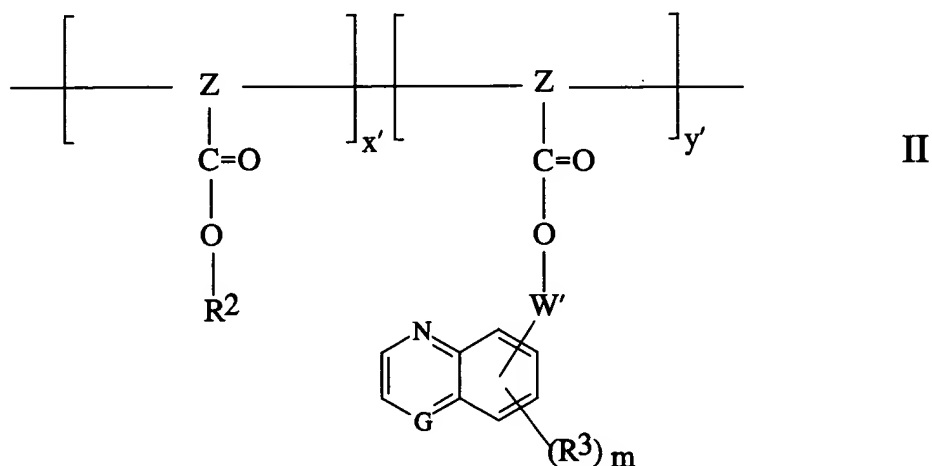
11. The photoresist of claim 10 wherein the chromophores absorb deep UV radiation.

12. The photoresist of claim 10 wherein the chromophores are selected from the group consisting of phenanthryl, acridine, quinolinyl and ring-substituted quinolinyl.

13. The photoresist of claim 10 wherein the dye is a copolymer.

14. The photoresist of claim 10 wherein the dye is an acrylic copolymer.

15. The photoresist of claim 10 wherein the dye comprises a structure of the following Formula II:



wherein each R² is independently substituted or unsubstituted alkyl;

W' is a bond or substituted or unsubstituted alkylene;

G is a carbon, nitrogen, oxygen or sulfur;

each R^3 may be independently halogen; substituted or unsubstituted alkyl; substituted or unsubstituted alkoxy; substituted or unsubstituted alkenyl; substituted or unsubstituted alkynyl; substituted or unsubstituted alkylthio; cyano; nitro; amino; hydroxyl;

m is an integer of from 0 to 7.

x' and y' are mole fractions of the respective units; and

each Z is a bridge group between polymer units.

~~16. A method for forming a photoresist relief image comprising:
applying a coating layer of a photoresist of claim 1 on a substrate; and
exposing and developing the photoresist coating layer on the substrate to yield a relief image.~~

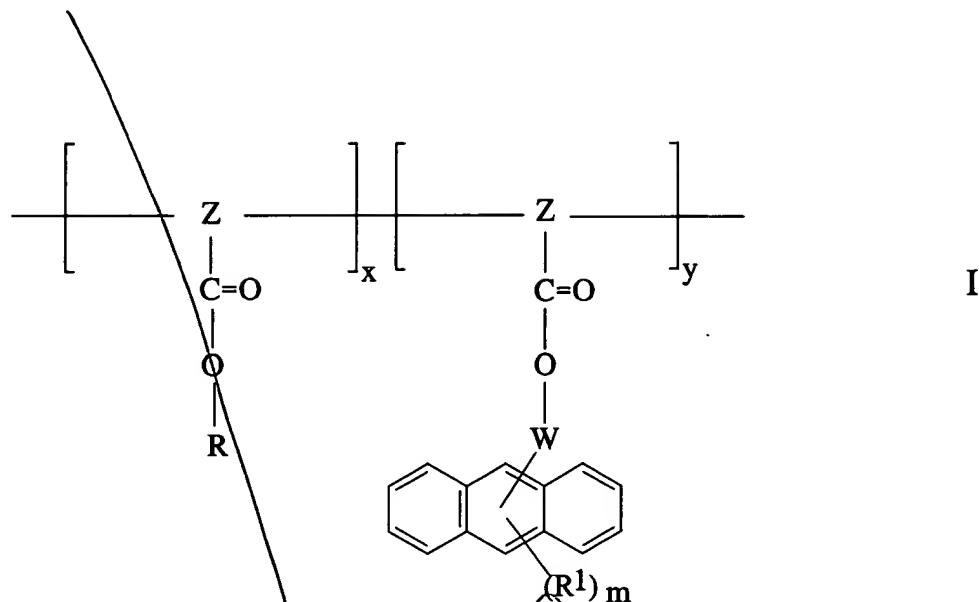
~~17. A method for forming a photoresist relief image comprising:
applying a coating layer of a photoresist of claim 10 on a substrate; and
exposing and developing the photoresist coating layer on the substrate to yield a relief image.~~

~~18. An article of manufacture having coated thereon the photoresist composition of claim 1.~~

19. The article of claim 18 wherein the substrate is a microelectronic wafer or a flat panel display substrate.

~~20. An article of manufacture having coated thereon the photoresist composition of claim 8.~~

~~21. A polymer comprising a structure of the following Formula I or II:~~



wherein in Formula I:

each R is independently substituted or unsubstituted alkyl;

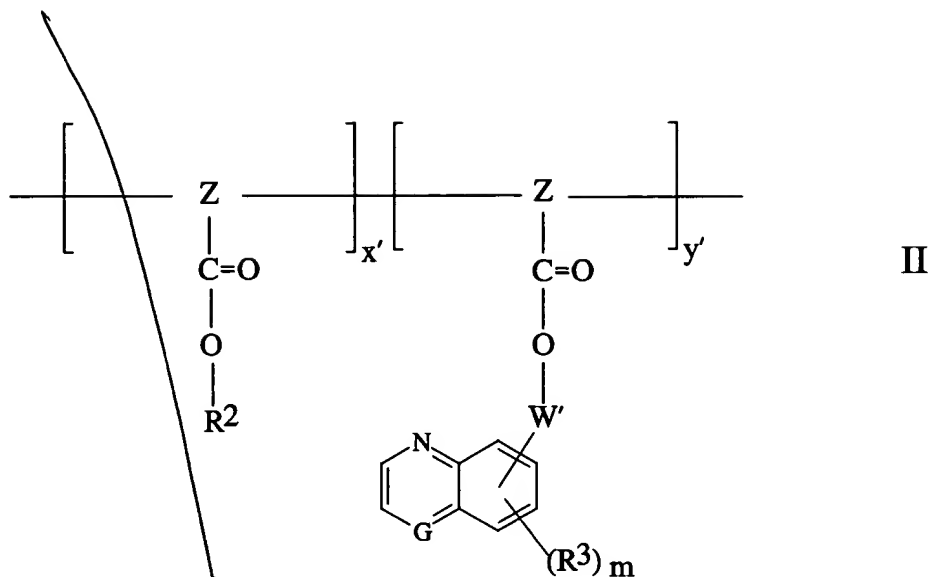
W is a bond or substituted or unsubstituted alkylene;

each R¹ may be independently halogen; substituted or unsubstituted alkyl; substituted or unsubstituted alkoxy; substituted or unsubstituted alkenyl; substituted or unsubstituted alkynyl; substituted or unsubstituted alkylthio; cyano; nitro; amino; hydroxyl;

m is an integer of from 0 (where the anthracyl ring is fully hydrogen-substituted) to 9;

x and y are the mole fractions of the respective units; and

each Z is a bridge group between polymer units; and



wherein in Formula II:

each R^2 is independently substituted or unsubstituted alkyl;

W' is a bond or substituted or unsubstituted alkylene;

G is a carbon, nitrogen, oxygen or sulfur;

each R^3 may be independently halogen; substituted or unsubstituted alkyl; substituted or unsubstituted alkoxy; substituted or unsubstituted alkenyl; substituted or unsubstituted alkynyl; substituted or unsubstituted alkylthio; cyano; nitro; amino; hydroxyl;

n is an integer of from 0 to 7.

x' and y' are mole fractions of the respective units; and

each Z is a bridge group between polymer units.

add a3

add B3

add C2
add D